COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department of Telecommunications and Energy on its own Motion into the Appropriate Pricing, based upon Total Element Long-Run Incremental Costs, for Unbundled Network Elements and Combinations of Unbundled Network Elements, and the Appropriate Avoided Cost Discount for Verizon New England, Inc. d/b/a Verizon Massachusetts' Resale Services in the Commonwealth of Massachusetts	D.T.E. 01-20

REBUTTAL TESTIMONY OF RICHARD B. LEE

ON BEHALF OF AT&T AND WORLDCOM

July 18, 2001

Rebuttal Testimony of Richard B. Lee in D.T.E. 01-20

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Richard B. Lee. I am Vice President of the economic consulting firm of Snavely King Majoros O'Connor & Lee, Inc. ("Snavely King"). My business address is 1220 L Street, N.W., Suite 410, Washington, D.C. 20005.

Q. ARE YOU THE SAME RICHARD B. LEE WHO SUBMITTED DIRECT TESTIMONY IN THIS PROCEEDING ON MAY 8, 2001?

A. Yes, I am.

Q. DID YOUR TESTIMONY CONTAIN A DESCRIPTION OF YOUR BACKGROUND AND EXPERIENCE?

A. Yes, it did.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. In this rebuttal testimony, I will respond to the direct testimony of Verizon-Massachusetts ("Verizon-Mass") witness Allen E. Sovereign ("Sovereign Direct") on the subject of the depreciation parameters appropriate for use in Total Element Long-Run Incremental Cost ("TELRIC") calculations.

Q. WHAT DEPRECIATION PARAMETERS DOES MR. SOVEREIGN PROPOSE?

A. On Page 1 of Attachment 1 to this rebuttal testimony I show Mr. Sovereign's depreciation life proposals in Column d. I have compared these proposals to:

- the range of projection lives prescribed by the Federal Communications Commission ("FCC") pursuant to its Prescription Simplification proceeding[1] (Columns a and b); and

[1] Simplification of the Depreciation Prescription Process, CC Docket No. 92-296 ("Prescription Simplification" proceeding).

- the projection lives last prescribed by the FCC for Verizon-Mass (Column c).

On Page 2 of Attachment 1 to this rebuttal testimony I have compared future net salvage percents in the same format.

Q. WHAT DO YOU CONCLUDE?

A. I conclude that the lives proposed by Mr. Sovereign for most accounts are significantly shorter than those prescribed by the FCC and thus inappropriate for use in TELRIC calculations. Indeed, many of the lives proposed by Mr. Sovereign are even shorter than the low point of the range prescribed by the FCC pursuant to its Prescription Simplification proceeding.

In marked contrast to his life proposals, Mr. Sovereign's future net salvage percent proposals are almost all within the ranges prescribed by the FCC. I would not oppose the use of Mr. Sovereign's future net salvage percents.

II. FINANCIAL BOOK LIVES SHOULD NOT BE USED IN TELRIC CALCULATIONS

Q. WHAT IS THE BASIS FOR MR. SOVEREIGN'S LIFE PROPOSALS?

A. Mr. Sovereign states that the lives he proposes are those used by Verizon for financial book purposes in 1999.[2]

Q. SHOULD FINANCIAL BOOK LIVES BE USED IN TELRIC STUDIES?

A. No. In a 1989 Petition, AT&T asked the FCC to base its regulatory depreciation on its financial books.[3] The FCC flatly rejected this request, stating:

> We conclude that AT&T has not made a

[2] Sovereign Direct, p. 2.

[3] The Modification of the Commission's Depreciation Prescription Practices as Applied to AT&T and The Prescription of Revised AT&T Depreciation Rates, Petition of American Telephone and Telegraph, February 15, 1989.

> sufficient showing that this Commission should base AT&T's book rates on the depreciation rates that it uses for financial reporting purposes. Initially, we observe that the present depreciation procedures have worked well for AT&T, in terms of ensuring more rapid capital recovery. Our recent depreciation orders have allowed AT&T to increase substantially its depreciation reserve, from 24.8% of plant as of January 1, 1984 to 39.1% as of January 1, 1989. AT&T does not state in its petition in what specific manner this Commission has been remiss in our depreciation rate prescriptions of recent years. Rather, it relies upon the fact that in 1988 it took a $6 billion writedown of its asset value for financial reporting purposes. This event may indicate that a new look at AT&T's depreciation situation is warranted, notwithstanding our recent depreciation represcription, and we are accordingly initiating herein an inquiry into AT&T's need for revised depreciation rates. However, that assessment can be accomplished using current procedures rather than depreciation rate methodologies that go well beyond those that we have traditionally employed. We have taken a series of initiatives during the past decade to ensure that carriers are able to adjust their depreciation rates promptly to recover capital investment costs as quickly as possible under the federal regulatory scheme. We do not see a need now to abandon one of those initiatives to address what appears to be a temporary problem that can be resolved with measures less drastic than those suggested by AT&T.[4]

Q. DID AT&T SEEK RECONSIDERATION OF THIS RULING?

A. No. I was instrumental in the filing of AT&T's Petition and the decision not to seek reconsideration. The FCC convinced me that the financial books of a

[4] Id., Memorandum Opinion and Order, FCC 89-325, adopted November 22, 1989 (footnote deleted).

company are biased to protect investors and are not appropriate for use in regulation. The FCC also convinced me that their existing procedures, given the prescription of forward-looking projection lives, would allow AT&T the opportunity to recover its capital investments.

Q. HAS ANY MAJOR LEC CONCEDED THE BIAS INHERENT IN THE FINANCIAL BOOKS?

A. Yes. The lives used for financial accounting purposes are governed by the Generally Accepted Accounting Principle ("GAAP") of "conservatism." In the FCC's Prescription Simplification proceeding, GTE noted that the GAAP conservatism principle "prefers the understatement (versus overstatement) of net income and net assets where any potential measurement problems exist."[5] Most accountants would agree that the very nature of depreciation makes it a challenge to measure. GAAP, independent auditors and the Security and Exchange Commission, therefore, might well prevent local exchange carriers ("LECs") from understating depreciation, since this would overstate net income and net assets. It is highly unlikely, however, that GAAP, or any financial auditor, would find that a LEC (or any company, for that matter) had overstated its depreciation, since this would result in a conservative view of net income and net assets.

In its October 1993 Order, the FCC agreed with GTE, stating:

> One of the primary purposes of GAAP is to ensure that a company does not present a

[5] Prescription Simplification, Comments of GTE Service Corporation and its affiliated domestic telephone operations companies ("GTE"), March 10, 1993, p. 14.

> misleading picture of its financial condition and operating results by, for example, overstating its asset values or overstating its earnings, which would mislead current and potential investors. GAAP is guided by the conservatism principle which holds, for example, that, when alternative expense amounts are acceptable, the alternative having the least favorable effect on net income should be used. Although conservatism is effective in protecting the interest of investors, it may not always serve the interest of ratepayers. Conservatism could be used under GAAP, for example, to justify additional (but, perhaps not "reasonable") depreciation expense by a LEC to avoid its sharing obligation. Thus, GAAP would not effectively limit the opportunity for LECs to manage earnings so as to avoid the sharing zone as the basic factor range option. In this instance, GAAP does not offer adequate protection for ratepayers.[6]

The Commission recently revisited this issue in response to a petition by the United States Telecom Association ("USTA"). The Commission stated:

> We are not persuaded that the role of the conservatism principle has changed or that we should change our previous decision. [7]

[6] Prescription Simplification, Report and Order, FCC 93-452, released October 20, 1993, para. 46.

[7] United States Telephone Associations Petition for Forbearance from Depreciation Regulation of Price Cap Local Exchange Carriers, ASD 98-91, Memorandum Opinion and Order, FCC 99-397, released December 30, 1999, para. 48.

III. COMPETITOR LIVES DO NOT PROVIDE AN APPROPRIATE BENCHMARK

Q. DO YOU AGREE WITH MR. SOVEREIGN THAT COMPETITOR LIVES PROVIDE AN APPROPRIATE BENCHMARK FOR LIVES TO BE USED IN TELRIC CALCULATIONS?[8]

A. No, I don't. Mr. Sovereign compares his life proposals to the financial book lives of AT&T and WorldCom as reported in their annual reports to stockholders.[9] These financial book lives are based on GAAP, and subject to the conservative bias described at length above. All Mr. Sovereign's comparison serves to prove is that the financial book lives used by Verizon are similar to the financial book lives used by AT&T and WorldCom. Such lives may protect the interest of investors, but they are not appropriate for use in TELRIC calculations.

Q. ARE MR. SOVEREIGN'S COMPARISONS TO CABLE TELEVISION ("CATV") LIVES APPROPRIATE?

A. No, they are not. The FCC did not perform independent analysis of the life characteristics of CATV plant as it has for telephone plant for over 50 years. The life ranges the FCC adopted for CATV operators were based upon a statistical analysis of the financial book lives that CATV operators were using. These lives were also based on GAAP, and are therefore inappropriate for use in TELRIC calculations. Instead of benchmarking his proposals against CATV operator life ranges, Mr. Sovereign should have benchmarked his proposals against the telephone company ranges prescribed by the FCC. Attachment 1 to this rebuttal

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8 Sovereign Direct, pp. 11-16.

9 Id., pp. 14-15.

testimony makes this comparison, and demonstrates that Mr. Sovereign's life proposals are far too short for use in TELRIC calculations.

IV. TFI LIVES DO NOT PROVIDE AN APPROPRIATE BENCHMARK

Q. DO YOU AGREE WITH MR. SOVEREIGN THAT THE LIFE RECOMMENDATIONS OF TECHNOLOGY FUTURES INC. ("TFI") PROVIDE AN APPROPRIATE BENCHMARK FOR LIVES TO BE USED IN TELRIC CALCULATIONS?[10]

A. No, I do not.

Q. WHAT IS THE BASIS OF TFI'S RECOMMENDATIONS?

A. TFI's recommendations are based upon studies sponsored by the Telecommunications Technology Forecasting Group ("TTFG"), an industry association of major LECs in the United States and Canada.[11] TFI's studies have been frequently used by LECs to justify shorter lives in regulatory depreciation proceedings. TFI's President, Dr. Lawrence K. Vanston, has testified on behalf of GTE, Rochester Telephone Corporation, Southern New England Telephone, and various Regional Bell Operating Companies ("RBOCs") in the U.S., and on behalf of Bell Canada and the other Stentor Companies in Canada.

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10 Sovereign Direct, p. 13 and 17-18.

11 Larry K. Vanston, Ray L. Hodges, and Adrian J. Poitras, *Transforming the Local Exchange Network: Analyses and Forecasts of Technology Change* (Technology Futures, Inc., 2d Ed. 1997), vii-viii. ("TFI Study").

Q. HAVE REGULATORS GENERALLY ACCEPTED TFI'S LIFE RECOMMENDATIONS?

A. No. For example, by comparing the low end of the current FCC life range (Column a on Page 1 of Attachment 1 hereto) to Verizon-Mass's proposed lives (Column d), for digital switching, digital circuit and the cable accounts, one can see the difference between the lives prescribed by the FCC and those similar to TFI's recommendations. Additionally, in my direct testimony I noted 20 states which adopted FCC or similarly prescribed lives.[12] It is perhaps telling that Mr. Sovereign could only cite to 3 states that accepted Verizon's proposed lives.[13]

Q. HOW DOES TFI DEVELOP ITS LIFE ESTIMATES?

A. Largely through "substitution analysis," which attempts to forecast the pattern by which new technology will replace old technology. [14]

Q. IS SUBSTITUTION ANALYSIS A FORWARD-LOOKING METHOD OF ESTIMATING LIVES?

A. Not really. The assumption that the future will be much like the past is the very basis of substitution analysis. TFI predicts an "avalanche" of retirements in various accounts based upon the application of past retirement patterns of obsolete technologies to future circumstances. This technique relies, for example, on retirement patterns such as those describing the replacement of crossbar switches in the 1980's.[15]

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12 Lee Direct, pp. 10-13.

13 Sovereign Direct, pp. 18-19.

14 TFI Study, pp. 4-7.

15 Id., p. 29.

Q. WHAT SPECIFIC "AVALANCHES" DOES TFI FORESEE FOR TELEPHONE PLANT?

A. TFI's recommendation lives are based upon the premise that the LECs will replace their narrowband telecommunications networks with broadband integrated networks capable of providing both telecommunications services and video services, such as cable television.[16] According to TFI, Fiber In The Loop ("FITL") will bring broadband to the home, displacing copper plant.[17] This will result in the upgrading of all transmission systems to Synchronous Optical Network ("SONET"), replacing existing circuit equipment.[18] And Asynchronous Transfer Mode ("ATM") switching equipment will provide a broadband switching capability replacing today's narrowband switch fabrics.[19]

Q. ARE THE LIVES RESULTING FROM THE USE OF SUBSTITUTION ANALYSIS NECESSARILY ACCURATE?

A. No. Substitution analysis merely provides a convenient method for plotting by year the growth of a new technology assuming the inputs to one's formula are correct. The output of a substitution analysis is only as correct as the inputs selected.

In the first place, substitution analysis is not even relevant unless it is known that a new technology will replace, not supplement, an older technology.

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16 Id., pp. 2, 27 and passim.

17 Id., pp. 2, 8-16 and 74-111. Verizon-Mass has no planning forecast for FITL (Verizon-Mass response to ATT 1-12).

18 Id., pp. 2, 16-18 and 113-125.

19 Id., pp. 2, 23-27 and 159-172. Verizon-Mass has no plans for ATM switch deployment in Massachusetts (Verizon-Mass response to ATT 1-8).

For example, to the extent ATM switches are deployed at all, they will be deployed as a supplemental technology to digital switches, not as a replacement for them. As such, substitution analysis is of no relevance. Indeed, even when a substitution has started, it does not necessarily follow that it will finish according to pattern. It appeared at one point, for example, that nuclear fuel would replace fossil fuel in electrical generation in this country. The use of substitution formulae in that case would have resulted in dramatically incorrect predictions.

Even if a full substitution is likely, the formula requires the user to predict both the rate of substitution and the point at which the replacement technology will reach 50 percent of the universe.[20] In other words, the analyst must insert as an input, the average remaining life of the old technology, since this is essentially the 50 percent level of the new technology. Although the substitution methodology allows the preparation and presentation of impressive looking charts and tables, it is merely charting the assumptions made by the analyst. Its outputs at the hands of TFI are no more credible than TFI's inputs.

Q. HAVE TFI'S FORECASTS PROVEN ACCURATE OVER THE LONG RUN?

A. No. Although TFI's forecasts have been provided to the FCC for over a decade, they have not been relied upon in the selection of plant projection lives.

The FCC has stated:

> Given the significant uncertainty that even TFI acknowledges exists in forecasting plant replacement over the next fifteen years, we do not find that the carriers that advocate adoption of TFI's much shorter projection lives have met

[20] The formula can also be used by selecting the rate of substitution and the 1 percent level.

> their burden. Depreciation reserves are at 52 percent, an all-time high, and have increased for each of the past five years. There is no evidence that the large wave of plant replacements forecast by TFI, which should result in increased retirements, has begun or is about to begin. …. We conclude, therefore, that the TFI study fails to establish convincingly that current projection lives are inadequate.[21]

Attachment 2 to this testimony provides an analysis of TFI's fiber in the feeder estimates. Page 1 of this analysis shows TFI's predictions for the percent of fiber in the feeder in 1988, 1994 and 1997, and actuals through 2000. In 1988 TFI predicted a substitution of 70.59 percent by 2000; in 1994 its prediction dropped to 38.00 percent; in 1997 its prediction dropped to 29.00 percent; and actual data for 2000 is 21.68 percent. Page 2 graphically portrays this data and demonstrates how TFI's life estimates have lengthened as actuals became available.

V. FCC PROJECTION LIVES ARE FORWARD-LOOKING AND APPROPRIATE

Q. DO YOU AGREE WITH MR. SOVEREIGN'S CRITICISM OF FCC PRESCRIBED LIVES?

A. No, I don't. Mr. Sovereign contends that FCC lives are based on an outdated, historical approach which results in artificially long lives. [22]

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21 FCC, 1998 Biennial Regulatory Review-Review of Depreciation Requirements for Incumbent Local Exchange Carriers, CC Docket 98-137, Report and Order, FCC 99-397, released December 30, 1999 ("1999 Update"), para. 16 (footnotes deleted).

22 Sovereign Direct, pp. 3-8.

Prior to 1980, this was a valid criticism. As I explained in my direct testimony, however, the FCC and other regulators long ago turned their attention to company plans, technological developments and other future oriented analyses.[23] It is high time that this tired criticism of FCC lives be withdrawn from service and retired.

In my direct testimony, I provided data on recent trends in depreciation reserve levels in the industry and for Verizon-New England ("Verizon-NE") which demonstrated that the projection lives prescribed by the FCC are forward-looking.[24] Attachment 3 to this rebuttal testimony provides the same data for Verizon-Mass.

The depreciation reserve level for Verizon-Mass has risen from 39.8 percent in 1991 to 53.8 percent in 2000 (see Attachment 3, column m), despite a growth in plant of over 50 percent. Verizon-Mass's depreciation rates have averaged 7.1 percent over the last 10 years, while its retirement rates have averaged only 3.4 percent (see Attachment 3, columns l and k, respectively). If the FCC were prescribing depreciation rates based upon historical indicators, it would be prescribing depreciation rates in the range of 3 to 5 percent instead of 7 percent.

Further evidence of the FCC's forward-looking orientation is evident in a review of historical life indications. As the following table demonstrates, FCC life prescriptions for Verizon-Mass are far shorter than its latest available historical life indications:

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[23] Lee Direct, pp. 3-8.

Account Name	Historical Life Indication[25]	FCC Prescribed
Computers	9.6	6.0
Digital Circuit	16.1	11.0
Poles	58.5	38.0
Aerial Cable-Exch. Metallic	28.4	22.0
Underground Cable-Exch. Met.	110.6	25.0
Buried Cable-Exch. Met.	40.4	23.0

If the FCC were still basing its life prescriptions on historical data, for example, it would have prescribed a life for digital circuit of 16.1 years, instead of 11.0 years.

Q. DO YOU AGREE WITH MR. SOVEREIGN'S CONTENTION THAT ECONOMIC LIVES ARE GENERALLY SHORTER THAN PRESCRIBED ASSET LIVES?[26]

A. No, I don't. The economic life of an asset is its total revenue producing life.[27] In general, this economic life begins the day an asset is placed "in service" and ends the day it is withdrawn from service (i.e. – retired).[28]

Mr. Sovereign contends, however, that the economic life of an asset can be affected when no retirements are evident. To support his contention, Mr. Sovereign creates a hypothetical example in which only 500 pairs of a 1200 pair cable are being used because only 1000 pairs were originally used and 500

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24 Lee Direct, pp. 6-8 and Attachments 4 and 5.

25 Verizon-Mass 1996 Depreciation Study.

26 Sovereign Direct, p. 6.

27 Public Utility Depreciation Practices ("Depreciation Practices"), National Association of Regulatory Utility Commissioners, August 1996, p. 318.

28 Contrary to Mr. Sovereign's comment on page 7 of his testimony, the "physical" life of an asset may be much longer that its economic life.

customers have left for competitors' networks.[29] Even were one to accept this extreme hypothetical, Mr. Sovereign's conclusion is flawed. The economic life of the 1200 pair cable will not change under this example, although the economic value of the cable might be reduced.[30] On the other hand, it is possible that the economic value of the cable serving the 500 remaining customers may be even greater than when it served 1000 customers, if the remaining customers generate more revenue by subscribing to advanced services. Even if revenues do decrease from their peak level, however, this may only serve to balance the lower level of revenue experienced in the cable's early years.

In any case, if Mr. Sovereign's hypothesis were correct, one would expect the utilization of copper cable to be significantly reduced. As Attachment 4 shows, however, this has not been the case for Verizon-Mass.

VI. COMPETITION AND TECHNOLOGY HAVE NOT SHORTENED PLANT LIVES IN RECENT YEARS

Q. DO YOU AGREE WITH MR. SOVEREIGN THAT COMPETITION AND TECHNOLOGICAL INNOVATION HAVE SHORTENED PLANT LIVES IN RECENT YEARS?[31]

A. No. The forward-looking lives prescribed by the FCC have long reflected the life shortening effects of facilities bypass, or competition, that have been predicted for well over a decade. However, the passage of the Telecommunications Act of

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29 Sovereign Direct, p.7. Note that this hypothetical example assumes that none of these 500 customers are being served over LEC facilities by means of resale or unbundled network elements ("UNE's).

30 Verizon-Mass concedes that none of its outside plant facilities (loops) are beyond their economic lives (Verizon Response to CC 1-14).

31 Sovereign Direct, pp. 8-11.

1996 has promised potential competitors alternatives to bypass, such as resale and the leasing of unbundled network elements. These alternatives will reduce the incidence of bypass, increase demand for existing facilities, and lengthen plant lives.

Indeed, facilities based competition might actually serve to lengthen some plant lives. It is generally accepted that competition spurs innovation and drives prices toward cost. Some innovative technologies result in the replacement of existing plant; some result in the enhancement of existing plant. In the early 1990's it appeared that the LECs would be replacing their copper distribution plant with fiber and coax to enable them to provide broadband video services as well as telephony. The development of Digital Subscriber Line ("DSL") technology has progressed to the point, however, where it is practical, and economic, to provide high speed Internet access, and even cable television services, over plain old copper wire. In the case of DSL technology, an innovation spurred by competition has served to extend the life of existing copper facilities.

In summary, it is not clear what the net long-term effect of competition will be on Verizon-Mass plant lives. To the extent that competition drives Verizon-Mass to replace plant, lives will be shorter. To the extent that competition drives Verizon-Mass to enhance its existing plant, lives will be longer.

Currently prescribed FCC projection lives represent the most unbiased, forward-looking estimates of the life expectancy of newly placed plant. My direct testimony supports this fact at length. It must be remembered that a shorter life

is not necessarily a more forward-looking life. It may simply be a biased estimate.

VII. CONCLUSION

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.